

What is Claimed is:

- [c1] A quick-release mechanism apparatus for a weight lifting bar, said weight lifting bar having at least two ends, said apparatus comprising:
- a receiving end, said receiving end being fixedly attached to said end of said weight lifting bar;
 - a keyed protrusion member, said keyed protrusion member having a geometric cross-section, a hollowed portion therein, a channel, a front end and a back end, said hollowed portion having a hollowed back end and a hollowed front end, said front end being fixedly attached to said receiving end with an attachment means;
 - a plurality of individual weight components, said individual weight components having an aperture located approximately in the center thereof, said aperture having a geometric configuration approximately the same as said geometric cross-section and a plurality of aperture teeth on at least one internal surface, wherein said aperture can readily receive said keyed protrusion member;
 - a quick-release handle, said quick-release handle being pivotally mounted within said receiving end; and
 - a ratchet mechanism, said ratchet mechanism being attached to said hollowed portion of said keyed protrusion member.
- [c2] An apparatus as claimed in Claim 1 wherein said attachment means is a threaded screw.
- [c3] An apparatus as claimed in Claim 1 wherein said geometric cross-section is triangular.
- [c4] An apparatus as claimed in Claim 1 wherein said keyed protrusion member further comprises a unique protrusion extending from the exterior surface of said keyed protrusion member.
- [c5] An apparatus as claimed in Claim 1 wherein said quick-release handle is a lever.
- [c6] An apparatus as claimed in Claim 1 wherein said hollowed portion comprises at least one compression spring fixedly attached to said hollowed back end.

[c7]

An apparatus as claimed in Claim 1 wherein said ratchet mechanism comprises, in combination:

a plurality of wheel members, said wheel members having a plurality of teeth-like structures on the periphery of said wheel members, said wheel members being rotatably attached to said hollowed portion whereby said teeth-like structures are accessible from the outside of said hollowed portion through said channel when said wheel members are attached thereto and further engage said aperture teeth when said individual weight components are placed over said keyed protrusion member; and a ratchet locking device, said ratchet locking device having a front end, a back end and a plurality of recessed areas to readily receive said wheel members, said front end having a quick-release handle contact point, said back end having a compression spring contact point, said recessed areas having at least one protrusion protruding toward said wheel member whereby said protrusion engages said teeth-like structures when said ratchet locking device is engaged and said wheel members can only rotate in one direction.

[c8]

An apparatus as claimed in Claim 1 wherein said ratchet mechanism comprises a ratcheting member, said ratcheting member having a top side, a bottom side, a front end and a back end, said top side having a plurality of angled slots to readily receive attachment pins, said back end having a compression spring contact point, said front end having a quick-release handle contact point, said bottom side having a plurality of teeth whereby when said ratcheting member is attached to said hollowed portion, said teeth are accessible through said channel.

[c9]

An individual weight component apparatus comprising:

an aperture, said aperture located approximately in the center of said individual weight component apparatus and having a keyed geometric shape; and
a geometric shape to prevent unwanted rotation when said individual weight component is placed on a flat planar surface.

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- [c10] An apparatus as claimed in Claim 9 wherein said geometric shape is a polygon.
- [c11] An apparatus as claimed in Claim 10 wherein said triangle is an equilateral triangle.
- [c12] An individual weight component apparatus, said individual weight component having a front side and a back side, said apparatus comprising a passive interlocking means whereby when said individual weight components are placed adjacently, each said individual weight component passively interlocks with an adjacent said individual weight component.
- [c13] An apparatus as claimed in Claim 12 wherein said passive interlocking means comprises a protruding geometric shape on said back side of said individual weight component and a corresponding receiving geometric shape on said front side of said individual weight component.
- [c14] An apparatus as claimed in Claim 13 wherein said protruding geometric shape is convex.
- [c15] An apparatus as claimed in Claim 13 wherein said receiving geometric shape is concave.
- [c16] An apparatus as claimed in Claim 13 wherein said passive interlocking means comprises a conical geometric shape.